Space Weather Forecast

Issued on Tuesday, 03 May 2022 at 01:18 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: No significant geomagnetic activity. Potential R1-R2 blackouts from regions across northwestern and southeastern limb.

Analysis of Space Weather Activity over past 24 hours
Solar Activity: Solar activity was Low through the last 24 hours, with only one Common-class flare of note, from a region close to moving onto the southeast limb. Despite not being visible, the magnetic loops from this region can still be seen, along with any flares produced from the region. A region which rotated away from view three days ago is still producing some Common-class flares which can be detected at Earth. Four sunspot regions have been numbered on the visible disc. Two of these are mature and inactive, with two new simple and currently benign regions developing through the last 18 hours. Two further as yet unnumbered regions have also emerged in the last 12 hours. A number of CMEs were observed being emitted from the farside of the Sun, but none of these have been assessed as Earth-directed.

Solar Wind / Geomagnetic Activity: The solar wind has been declining from slightly elevated to ambient levels as the Earth moves away from a region of faster solar wind. The total magnetic field and the north-south component have been weak, but with a slight indication of a weak CME passage during the afternoon of the UTC day. This passage did not affect the level of geomagnetic activity, which started Unsettled, but soon became Quiet.

Energetic Particles / Solar Radiation: No solar radiation storms were observed during the last 24 hours.

Four-Day Space Weather Forecast Summary
Solar Activity: Low or Very Low activity is expected at first, but with a risk of Moderate activity from later on 03 May as new potentially active regions rotate onto the visible side of the Sun.

Solar Wind / Geomagnetic Activity: No Earth-directed CMEs are forecast. The current fast wind will continue to wane through 03 May, with no fast winds expected to affect the Earth during the forecast period. Initially Quiet, with isolated Unsettled intervals, becoming Quiet through the period.

Energetic Particles / Solar Radiation: Solar radiation storms carry a slightly raised chance of passing S1 at first, due to the presence of numerous active regions narrowly over the western solar horizon, however this risk should soon reduce to background.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	1	1	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	10	10	10	10
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	5	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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